CONTRASTES DE HIPÓTESIS.

CONTRASTES SOBRE LA MEDIA:			
		Rechazamos H_0 a un nivel de significación α si:	
H_0	**H_1**	**σ^2 conocida**	**σ^2 desconocida**
$\mu \le \mu_0$	$\mu > \mu_0$	$\bar{x} \le \mu_0 + \frac{\sigma}{\sqrt{n}} z_\alpha$	$\bar{x} \ge \mu_0 + \frac{s}{\sqrt{n}} t_{n-1,\alpha}$
$\mu \ge \mu_0$	$\mu < \mu_0$	$\bar{x} \le \mu_0 + \frac{\sigma}{\sqrt{n}} z_{1-\alpha}$	$\bar{x} \le \mu_0 + \frac{s}{\sqrt{n}} t_{n-1,1-\alpha}$
$\mu = \mu_0$	$\mu \ne \mu_0$	$\lvert \bar{x} - \mu_0 \rvert \ge \frac{\sigma}{\sqrt{n}} z_{\alpha/2}$	$\lvert \bar{x} - \mu_0 \rvert \ge \frac{s}{\sqrt{n}} t_{n-1,\alpha/2}$

CONTRASTES SOBRE LA VARIANZA:			
		Rechazamos H_0 a un nivel de significación α si:	
H_0	**H_1**	**μ conocida**	**μ desconocida**
$\sigma \ge \sigma_0$	$\sigma < \sigma_0$	$\sum_{i=1}^{n} (x_i - \mu)^2 \le \chi^2_{n,1-\alpha}\, \sigma_0^2$	$s^2 \le \frac{\sigma_0^2}{n-1} \chi^2_{n-1,1-\alpha}$
$\sigma \le \sigma_0$	$\sigma > \sigma_0$	$\sum_{i=1}^{n} (x_i - \mu)^2 \ge \chi^2_{n,\alpha}\, \sigma_0^2$	$s^2 \ge \frac{\sigma_0^2}{n-1} \chi^2_{n-1,\alpha}$
$\sigma = \sigma_0$	$\sigma \ne \sigma_0$	$\left\{ \begin{array}{c} \sum_{i=1}^{n} (x_i - \mu)^2 \le \chi^2_{n,1-\alpha/2}\, \sigma_0^2 \\ \text{ó} \\ \sum_{i=1}^{n} (x_i - \mu)^2 \ge \chi^2_{n,\alpha/2}\, \sigma_0^2 \end{array} \right.$	$\left\{ \begin{array}{c} s^2 \le \frac{\sigma_0^2}{n-1} \chi^2_{n-1,1-\alpha/2} \\ \text{ó} \\ s^2 \ge \frac{\sigma_0^2}{n-1} \chi^2_{n-1,\alpha/2} \end{array} \right.$

CONTRASTES DE HIPÓTESIS.

CONTRASTES SOBRE DIFERENCIA DE MEDIAS:

H_0	H_1	Rechazamos H_0 a un nivel de significación α si: σ_1^2 y σ_2^2 conocidas	σ_1^2 y σ_2^2 desconocidas pero $\sigma_1^2=\sigma_2^2$
$\mu_1 - \mu_2 \le \delta$	$\mu_1 - \mu_2 > \delta$	$\bar{x}-\bar{y} \ge \delta + z_\alpha R_p$	$\bar{x}-\bar{y} \ge \delta + t_{n_1+n_2-2,\alpha} S_p$
$\mu_1 - \mu_2 \ge \delta$	$\mu_1 - \mu_2 < \delta$	$\bar{x}-\bar{y} \le \delta - z_\alpha R_p$	$\bar{x}-\bar{y} \le \delta - t_{n_1+n_2-2,\alpha} S_p$
$\mu_1 - \mu_2 = \delta$	$\mu_1 - \mu_2 \ne \delta$	$\lvert\bar{x}-\bar{y}-\delta\rvert \ge z_{\alpha/2} R_p$	$\lvert\bar{x}-\bar{y}-\delta\rvert \ge t_{n_1+n_2-2,\alpha/2} S_p$

$$R_p = \sqrt{\frac{\sigma_1^2}{n_1}+\frac{\sigma_2^2}{n_2}} \qquad S_p = \sqrt{\frac{(n_1-1)S_1^2+(n_2-1)S_2^2}{n_1+n_2-2}}\ \sqrt{\frac{1}{n_1}+\frac{1}{n_2}}$$

S_1 y S_2 son las cuasivarianzas

CONTRASTES SOBRE LA DIFERENCIA DE VARIANZAS:

H_0	H_1	Rechazamos H_0 a un nivel de significación α si: μ_1 y μ_2 conocidas	μ_1 y μ_2 desconocidas
$\sigma_1^2 \le \sigma_2^2$	$\sigma_1^2 > \sigma_2^2$	$\dfrac{\sum_{i=1}^{n_1}(x_i-\mu_1)^2}{\sum_{i=1}^{n_2}(y_i-\mu_2)^2} \ge \dfrac{n_1}{n_2} F_{n_1,n_2,\alpha}$	$\dfrac{s_1^2}{s_2^2} \ge F_{n_1-1,n_2-1,\alpha}$
$\sigma_1^2 \ge \sigma_2^2$	$\sigma_1^2 < \sigma_2^2$	$\dfrac{\sum_{i=1}^{n_2}(y_i-\mu_2)^2}{\sum_{i=1}^{n_1}(x_i-\mu_1)^2} \ge \dfrac{n_2}{n_1} F_{n_2,n_1,\alpha}$	$\dfrac{s_2^2}{s_1^2} \ge F_{n_2-1,n_1-1,\alpha}$
$\sigma_1^2 = \sigma_2^2$	$\sigma_1^2 \ne \sigma_2^2$	$\left\{\begin{array}{l} \dfrac{\sum_{i=1}^{n_1}(x_i-\mu_1)^2}{\sum_{i=1}^{n_2}(y_i-\mu_2)^2} \ge \dfrac{n_1}{n_2} F_{n_1,n_2,\alpha/2} \\ \text{ó} \\ \dfrac{\sum_{i=1}^{n_2}(y_i-\mu_2)^2}{\sum_{i=1}^{n_1}(x_i-\mu_1)^2} \ge \dfrac{n_2}{n_1} F_{n_2,n_1,\alpha/2} \end{array}\right.$	$\left\{\begin{array}{l} \dfrac{s_1^2}{s_2^2} \ge F_{n_1-1,n_2-1,\alpha/2} \quad \text{si} \quad s_1^2 \ge s_2^2 \\ \text{ó} \\ \dfrac{s_2^2}{s_1^2} \ge F_{n_2-1,n_1-1,\alpha/2} \quad \text{si} \quad s_1^2 < s_2^2 \end{array}\right.$